

SUMMARY

OF THE

CLAIMS OF MEDICAL OFFICERS

OF

The Army and Navy

TO

MILITARY REWARDS AND DISTINCTIONS.

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S U M M A R Y.

1. THE exclusion of the medical officers of the army and navy from participation in the honours and distinctions awarded to military and naval officers has arisen from an original error, or misconception. It was an error natural, perhaps, at the time, to a commercial people, unacquainted with the rights and usages that grow up with, and that are engendered by, war. The result has been, a long-continued injustice to one of the most useful and meritorious classes of public servants.

2. In the early formation of our army, surgeons were classed with chaplains and commissaries; or, in modern official phraseology, as "civil staff"—as "non-combatants." The truth and value of these terms will presently be examined.

3. All military officers are non-combatants in the personal sense, the paramount duty of an officer being to direct his men; and he never uses his sword unless personally attacked—a most rare occurrence. Murat—the best and boldest of cavalry leaders—is said to have seldom drawn his sabre. He allowed the trumpeters to defend his person, while he directed everything. That military officers, in the execution of their duties, incur the greatest share of risk, no one is disposed to deny; nor will any one dispute their claims to their proportionate shares of honours and rewards. There should be fair dealing towards every class.

4. Mr. Guthrie states, on his large experience of war, that

"it is quite impossible for a regimental surgeon to be out of fire, if he would do his duty; and a medical staff-officer can scarcely be out of cannon-shot. Every one who has been a regimental officer knows well how often the surgeon is called to the front, even when a single man is wounded. The soldier expects this assistance; and medical officers have never disappointed him, either in the French or in the British armies. In a professional point of view, this close attendance has been the means of saving life; and an examination at this the earliest possible period, has often saved a limb." Going into action, at Roliça, with the 29th Regiment, Mr. Guthrie says: "I was told my place on such occasions was seven paces in rear of the colours, (we then knew no better.)"

5. It is well known, also, that no storming party ever ascends the breach without its surgeons in company up to the very breach; and in every siege the surgeons are placed in the gorge of the trenches.

6. The records of every campaign, in Europe and in Asia, will show that, in the execution of these duties, the medical officers of the army are often wounded and killed.

7. The classing of the medical officers of our fleets and armies with clergymen and commissaries is shown, then, to have been an egregious error, and one that has proved, and that must prove, most injurious to the public interests.

8. Dr. Robert Jackson said, long ago, that "as the medical staff shares in the fatigues and dangers of war, so, in just reason, it is entitled to a share in the advantages." This is but honest dealing and fair play.

9. Amongst medical officers who have served, it is matter of universal remark, that he who has not the mental characteristics of a soldier never proves a good military surgeon, and the experience of the French and British armies confirms the justice of the observation. Mr. Guthrie says, that "the assistant-surgeon of a regiment learns the duty of a soldier in addition to that of a doctor, and a military surgeon ought to know the one just as well as the other." This is the class marked out by the regulations of our army for exclusion and depreciation—as "dwellers beyond the pale."

10. In the eye of the soldier, and in comparison with other officers, the surgeon of every grade stands forth as the mark for exclusion from everything that has the name or semblance of military distinction and reward. Though well educated, and bred in the middle class of society, which furnishes, and ever will furnish, the best officers in our fleets and armies—in that class which constitutes the strength and greatness of the nation—he finds himself debarred from the cheapest rewards of governments. He has before him but the continual sense of the unjust and impolitic inequality of his position. If the rewards claimed by the medical officer were even trifling and of no value, (which he is not disposed to admit,) the exclusion from them would be esteemed by him to be a stigma—an invidious and unwise separation—where, on the score of education and of service rendered to the state, there ought to be but one class.

11. The Emperor Napoleon—"the greatest man of whom history makes mention"—who wisely designed that there should be rewards for every rank—from the common soldier to the marshal—bestowed military honours on those great surgeons who had conferred lasting benefits on the fleets and armies of France. This he did sometimes on the field of battle, as at Wagram; and Marshals Ney, Soult, and others of his generals, have never been heard to complain that Barons Larrey, Desgenettes, and Percy had in this manner been raised to the highest grade of the legion of honour. Napoleon designed that honorary distinctions should not be exclusively confined to one class of officers, but should be accessible to all officers who by their services and their talents deserved well of the state.

12. The great commanders of France took no pleasure in seeing the eminent surgeons of their army in the dust. On the contrary, those celebrated generals have uniformly viewed with satisfaction the elevation of men, to whose knowledge, experience, discernment, and moral courage, the efficiency of their army has been, and is, so much indebted. They even considered that the legion of honour derived renown from the enrolment of such names in its ranks.

Napoleon, on the other hand, deemed the honours conferred on such men to be called for alike by justice and necessity in any plan which should pretend to give "consistence to the system of recompences" granted by the state to its servants.

13. In this country, military and other rewards, even to those who receive such, are bestowed on no system or ground of true desert. They are too often made the slaves both of rank and of wealth, and given on political grounds foreign to the merits of the service—frequently on account of aristocratic or other family connexion, on grounds of political interest, &c. The ignorance of popular excitement and the power of a party press has each, in its turn, guided or withheld the hand of the sovereign—as witness the absurd and exaggerated rewards conferred on Sir John Keane and others, and the cruel treatment of Sir Robert Calder. In truth, the lavish abuse of honorary rewards has of late years greatly weakened the consideration in which they were once held. There is no system. We hear sometimes of officers most glaringly over-rewarded; and at other times, but more rarely, of such as are grievously overlooked. Such are the vibrations of error with us—the swing of the fault one way, after the swing the other way. But the responsibility for the abuse of public rewards is second only to the neglect of all rewards where they are justly due.

14. Within four years, four commissariat officers of the Bengal army have received the honours of the military order of the Bath,—three of them deservedly,—and all for services purely civil. One of these gentlemen, a captain, has recently been promoted to a brevet-majority, and then to a brevet-lieutenant-colonelcy, for services of a similar character, or for no services at all. The last of his rewards was for the battle of Ferozeshah, on the Sutlej, at which, say the Indian newspapers, "he was not even present." But had he been present, his duties must have been those only of a commissary, and therefore purely civil. He could not have been, and ought not to be, under fire. For the rest, he somehow became possessed of powerful interest, without which, in this country, no claims are permitted to pass current. In the very battle here spoken

of a surgeon and an apothecary were killed, and at Moodkee two surgeons were killed.

15. The following simple narrative is here presented, in form of contrast with the above:—

“Memorandum of the Services of Staff-Surgeon Donald Macleod, presented to the Duke of Wellington. London, August 15, 1827. Hospital-Assistant, Sept. 10, 1799; Assistant-Surgeon, 82nd Regiment, Jan. 20, 1800; Surgeon, 38th Regiment, Nov. 25, 1803; Staff-Surgeon, Sept. 24, 1813; Placed on Half-Pay, April 25, 1821; Reappointed March 15, 1827.

“Previously to entering the regular service, I was surgeon’s mate of the 1st battalion, and surgeon of the 2nd battalion of the Breadalbane Fencibles, from Feb. 25, 1798, to March 24, 1799. I served with the Duke of York, in Holland, in 1799; in the Mediterranean to the end of the war, in 1802; at the capture of the Cape of Good Hope, under Sir David Baird; at Monte Video, under Sir Samuel Auchmuty; and at Buenos Ayres, under General Whitlock. I went to Portugal with Sir Arthur Wellesley, and was in all the operations of that campaign, to the battle and embarkation at Corunna.

“I was at Walcheren during the whole time it was occupied, and returned to the Peninsula in May, 1811; I was in the battles of Salamanca and Vittoria, and at the sieges of Burgos and St. Sebastian, and in all the actions fought in the neighbourhood of Bayonne and Orthes; I embarked at Bordeaux, for Canada, with the brigade commanded by Major-General Robinson, and served there for a year, during which period I was present at Plattsburg, and at most of the operations on the lower frontier. On my return I joined the army in France, and remained there till the formation of the Army of Occupation. I did duty at Dover, and in London, from June, 1816, to May, 1821. On retiring on half-pay, I went to New South Wales with the Governor, Sir Thomas Brisbane, where I remained about four years, and although not absolutely employed in the medical department of the army, I was still in the King’s service.

“I am now returning as staff-surgeon to that colony, with-

out one single advantage, and with nothing but the bare pay of the rank I have held for twenty-four years, in every quarter of the globe. This is my position, after a service of twenty-nine years and four months.

“(Signed,)

DONALD MACLEOD, M.D.,
“ Surgeon to the Forces.

“P.S.—There is little to add to the above statement. I sailed from the Cove of Cork on Sept. 27, (being the fifth time I left that place for foreign service,) and landed at Sidney, on Jan. 3, 1828. I remained as staff-surgeon and principal medical officer of the colonies of New South Wales and Van Dieman’s Land, to Jan. 17, 1830, when I sailed for Bombay, having been appointed deputy inspector-general at that Presidency, where I remained until Feb. 8, 1834, when I was transferred to Madras, and from thence to be inspector-general in Bengal, in July, 1837.

“DONALD MACLEOD.”

16. Donald Macleod was but a simple gentleman, a native of the Isle of Skye, an island which furnished 10,000 sterling soldiers, and 600 officers to the British army during the late war. The blood and brains of his younger brother were scattered in his face at the Siege of St. Sebastian, while conversing together in the trenches. Dr. Macleod was a man of great talent, experience, and courage. He died in Bengal without any honorary mark of service.

17. The late Dr. Robert Jackson served fifty years in the British army, and he was the most eminent physician that ever served in any army. He saved, by his admirable arrangements and discipline, thousands of lives to the British army, and thereby, as well as by his admirable system of hospital finance, hundreds of thousands of pounds sterling in money to the State. He anticipated all modern physicians in the treatment of fever, a disease that has destroyed two-thirds of mankind. For one item of £80,000 per annum saved to the government, Dr. Jackson received, through the late Duke of York, a pension of £250 per annum for life. He never received any other reward, and when he died he is believed to have left his widow, who is still living, in poverty.

Let any one imagine only a comparison of the services, of which but a tithe is given here, with those of the average of our admirals and generals, and let him then say what he thinks of the treatment of this great public servant. In the profession of the naval and military surgeon alone it is, that improvement is without recompence, that talent and labour are without a reward. The simple, manly, and unadorned portrait of Robert Jackson, prefixed to his great military work, presents a monument at once of distinction and of reproach.

18. Mr. Guthrie, a great military surgeon, was twice wounded while in the ordinary discharge of his duties. The late Dr. Theodore Gordon was wounded three times, one of these wounds (a dangerous one through the neck) being received when called to the front to assist his commanding officer.

The number of medical officers wounded during the Affghan war the writer has no means of ascertaining; but there were eight surgeons killed of the Indian army alone, besides three belonging to her Majesty's army. Of the former, Dr. Lord, of the Bombay army, was killed in a charge of cavalry. Seeing that the desperate circumstances of the case admitted of no professional exercise, this gentleman charged along with his brother officers, and was killed with several of them. Speaking of these more recent transactions only, we find that in the principal battles fought in Affghanistan, in China, at Gwalior on the Sutlej, and in the Punjab, the inspecting medical officers and the field surgeons have, in every instance, received, in the general orders of the respective commanders, the most cordially expressed and personal thanks for conduct and ability in the field. For all these services, all classes of officers, staff and regimental, above the rank of lieutenant, have received promotions and the honours of the Bath in profusion, and by hundreds, while not one of all the medical officers employed on the arduous services mentioned, has, in any instance, received a recompence, even the most trifling.

"You, Sir, have referred to one individual twice wounded in the Peninsular war, and whose name is imperishably connected with the improvements which surgery owes to that war, but who, in his own person, owes no distinction to the

state. Another friend of mine, whose very pardonable boast it is, that he has been in one battle more than the Duke of Wellington, has sustained a long life of incessant occupation in the public service; and has, in consequence, attained a very respectable position in the medical department of the army, but remains without any mark of personal distinction.

“Another has been thirty years abroad on professional duty in the Peninsula, in India, in China, and in America, has met with the most flattering acknowledgments of his zeal and abilities from all ranks in the service, but remains alike undistinguished by the state. These gentlemen, in common with myself and a hundred others, have obtained their medals; but these, as you have justly observed, ‘are only the proofs that the duties of their profession have brought medical officers on the battle-field of every war, and, as they do not in the slightest degree distinguish personal conduct, so they cannot usefully stimulate individual merit.’”—*Letter of Sir George Ballingall to Sir De Lacy Evans.*

19. In none of our Gazettes have we been able to find that at any time chaplains, commissaries, or pursers, have been either wounded or killed.

20. It has been seen, that while officers employed as commissaries have received military rewards or promotions, the ablest and best of our army surgeons have been treated with an uniform, systematic, and unwise neglect, their claims being always held to be too late or too early. Could we but “behold and count them as they rise to view,” how many samples of the lumber and refuse of aristocracy—how many of the out-scourings of the London clubs—how many men, for merely holding office in blameless mediocrity, have been rewarded unjustly, and at the country’s cost? Their numbers, at least, would prove respectable. But how many noble-minded, able, and deserving medical officers from the middle class of society have at the same time been crushed, and allowed, like Jackson and Macleod, to die unnoticed and unrewarded, it were in vain to reckon. It is reserved for medical officers alone to benefit neither by popular caprice nor by royal caprice. They may, and do, receive various military and honorary dis-

tinctions from continental sovereigns, but from the British sovereign they may receive none.

21. The practical working, the facts, and the sad results of "the swing of the fault one way, after the swing the other," such as they now hold in England, have here been faintly exhibited. It rests with the legislature to determine whether this state of things is destined to last longer. Dr. Robert Jackson, writing forty years back, spoke with hope of the legislative branch of the government, "there being a presumption, amounting almost to proof, that there is no chance of obtaining it from the executive." Jackson was like the great statesmen mentioned by Mr. Macaulay, who "looked far behind them and far before them."

22. The medical department of the army asks for no favour. It requires from its superiors but a brief and considerate hearing. Its demands are just; it requires only that it shall no longer be left behind all other classes of officers serving in her Majesty's and in the Indian armies.

23. In all the armies of continental Europe, the medical department is treated with honour and distinction. It is believed that the medical officers of the British army are not surpassed by any in the world; yet they are neglected by the state. During the sickly campaign, and in the hour of battle, the surgeons of our army are esteemed the finest fellows in the world, risking their lives for nothing. But when peace comes round, their services are ignored and forgotten, and their claims overlooked. The devoted exertions of the medical staff are freely acknowledged in words; and, for the rest, they are willingly left in the undivided privilege of tending and soothing the wounded and sick soldier, on the field of battle, and in the hospitals. Here the sympathies of our admirals and generals, with officers engaged in the most difficult, trying, and useful of duties, begin and end. What is the use of such praise, and of such sympathy—sympathy which knows nothing, cares nothing, costs nothing, intends nothing, and means nothing? Such praises and sympathy are worth nothing, and that is perhaps the reason why they are so liberally offered.

24. The habits of life and the sentiments of a military surgeon

are and must be those of the society in which he lives. It has never been otherwise. His hourly and familiar intercourse with men and officers, under every conceivable circumstance of suffering, success, or reverse; his duties in the field, and in quarters; every incident of his life, in short, tends, by association and feeling, to render him a soldier. The writer is assured that naval and military surgeons are far more deeply affected by the sense of the inequality of their position as compared to that of naval and military officers than they could be by any comparative reduction in pay or pension.

25. Medical officers entertain a strong impression, also, that the original error stated in Paragraph 1 has in latter times been converted into a mere technicality, or an unworthy trick, or pretence, to their disadvantage. Were the empty and incorrect designation of "civil staff" pleaded against them by hired lawyers in a common court of justice, then the case would be intelligible. Certain it is, however, that no gentleman in the ordinary transactions of life could venture to adduce arguments such as are commonly and publicly urged against the unquestionable claims of the medical staff. The surgeons of the army are as truly and essentially military as any class of officers in it, and they are not behind any in fair pretension to military recompence. The increase of pay granted to medical officers has been unfairly adduced as standing in place of all further rewards. The pay of medical officers is but barely respectable. Let but a comparison of medical allowances be made with the commands and the off-reckonings of military officers, and then we shall see how the case really stands. We know for a certainty that medical officers "do not enjoy the advantages of an improved retirement as granted to veterinary surgeons and quartermasters," whilst "the widows of medical officers are not so well provided for by pension as the widows of officers of relative rank." — *Speech of Lieut.-General Sir Howard Douglas, Bart., April 12, 1847.*

26. To mortify a man's natural pride, to limit his resources, and to set a mark of exclusion and consequent degradation upon him—these are surely enough, without having recourse

to unfounded and insincere arguments. The former system is, indeed, the only species of persecution of which the feeling and cultivation of the age will admit.

27. It might have been expected that military officers serving with our army surgeons, knowing and experiencing, as they must, the practical value of their skill and courage in peace and in war, should have exhibited generous and just feeling towards them and their claims, personal and public. With some distinguished and honourable exceptions, the generals of our army have, in the mass, acted otherwise; and the writer could recount an instance of the blackest ingratitude on the part of a fortunate peninsular general, but he has no desire to degrade our common nature by the recital. The admirals and generals, in the mass, have stood by unmoved, and looked on at the injustice, while some, in the easy indifference of an assured monopoly, have actually opposed the justice. It is no wonder, therefore, that our commanders should, in the mass, be regarded by medical officers with those feelings which injustice, aggravated by ingratitude, naturally excites.

28. Officers in authority should by this time have learned to consider this subject in a manner less confined and erroneous. They may rest assured, that whatever may be given to the deserving army and navy surgeon will not be taken from them. There is no fear that the medical staff officer will ever interfere with the commands or with the off-reckonings of colonels of regiments. Our admirals and generals should learn, on the other hand, that the more naval and military surgeons are raised, the more their profession is made respectable in the eyes of the seaman and soldier—the better for the sick and wounded—the better for the state—the better even for the admirals and generals, decorated and undecorated. There can be no question on this head with any reasoning person. As it now holds, the medical officers of the army and navy are treated on the worst principles of the worst corporations—on the class principle, so repressive of the best energies, and injurious, consequently, to the best interests of the public services of this country. This bad treatment of our medical

officers springs from one single principle, and represents but one single idea—that of appropriating all honours and all rewards for the benefit of one class of men and for one class of service, to the exclusion of every other class of men and of every other class of service, how deserving soever.

29. As regards the medical departments intrinsically, there is another circumstance that ought to be known to authority; that in respect of them, as of every other department of educated men, it is impossible for governments to attach officers to their service, to lead them up to the highest point of exertion and of excellence, by money alone. This, I repeat, is impossible, and unless men retrograde in knowledge, or the nature of man change, it must be so.

30. The state and prospects of the church and of the law prove this. If any one doubt it, let him but imagine the whole body of the church and the law stripped of rank and station, and placed on small salaries; and for the rest, let churchmen and lawyers be permitted to look for all further reward to the mere contemplation of their own merits. Our clergy, for certain, would not relish the practical application of the high-sounding abstract principle—"It is better to deserve and not to have, than to have and not deserve." The first limb of the aphorism has been reserved for exclusive application to the fortunes of the medical officers of our fleets and armies. The practical enforcement of the second principle would vacate many a fat benefice.

31. Where would have been the exploits of our navy and army—where the great works of our divines and lawyers—had the educated members of the sea and land services, of the church and of the law, been treated on a principle of uniform and absolute neglect and exclusion by the authorities of the state?

32. The principle of leaving men to the reward that is within themselves—to the virtue which is its own reward—may be sufficient for a good man, perhaps; but as no person in his senses can believe that such a principle would prove safe with churchmen, the medical officers of the army may be permitted to waive the discussion of it. The writer ventures to say, that a trial of such a scheme of recompence during six months

only of active warfare, by sea and land, will prove as fatal to the public interests as unjust and ungrateful towards individuals. What, then, must be the state of feeling in the ranks of the army and navy surgeons? The writer is well acquainted with it, but he does not choose to enter on subjects so painful.

33. The military and naval surgeon, to be useful to the soldier and seaman, must possess knowledge, judgment, energy, indefatigable industry, resolution, address, and an untiring patience. To these qualities, he must add "experience of war, and an acquaintance with the powers of the human constitution." He must possess a courage, not of the mechanical kind, but of the highest order—a courage that does not look to rewards. No men are more alive to the fact that honour is the vital principle of armies than are the naval and military surgeons, and no class of officers is more distinguished for good conduct, whether in war or peace. Jackson, the least appreciated, and the most ungratefully treated during life, was the perfection of his class. In after times his memory will be more honoured than that of a hundred of the ordinary run of generals; for the British soldier owes more to his exertions than to those of his most successful commanders.

34. Let us compare the qualities which are every day sufficient to secure to the military officers the highest rewards, with those which must characterize the naval and military surgeon in his daily avocations. For one mere act of personal exposure, or for being present even in action or siege, we find that the military officer obtains honours of the Bath and other distinctions, according to his rank. Yet this person may be, and often is, altogether wanting in moral courage, without which—not to speak of science and skill—the naval and military surgeon can neither move nor act. The generous and modest heroism of Dr. McWilliam, of the youthful Sidney Bernard, of Drs. McClure, Maconchy, Hartman, Coffey, Stewart, and Rogers, on the most trying of all duties, add lustre even to the surpassing heroism of our seamen.

35. The personal bravery of Generals Dupont and Elphinstone has never been called in question; yet both capitulated with disgrace, because each was deficient in those qualities

without which a commander is nothing—firmness and moral courage—qualities so conspicuous in Robert Jackson on the field of battle as in private life. Nothing can offer a finer example of the character of this officer's mind than his march into the cross-fire to succour the wounded who were suffering from it; his insisting on saving his general by means of his horse, while he saw that he must be killed or taken prisoner in the act; his passing the day and night, when taken prisoner, in dressing the British wounded, and then the tearing of his only shirt for bandages wherewith to dress the American wounded;—these were characteristic acts. When persecuted by the influential public speculators, whose vile practices he had exposed,—when, through their intrigues, “a power,” as he called it, “unknown to the state”—when no less a personage than Queen Charlotte had been dragged forth to crush him,—nothing daunted, he stood firm in his moral rectitude, and came off triumphant. Such was Jackson. What shall we say of the fate of this man!

36. To a reformed House of Commons alone must the medical officers of the army and navy look for redress from grievances of a character unusual in modern times. In such a house there may be occasional error, but the cause of the deserving medical officer will not there suffer from the bad pride which, in aristocratic bodies, always prevents the retrieval of faults.

37. Napoleon has asked, “Do you believe that you could ever make a man fight on abstract principles?” and he answers, “Never!—such views are fit only for the scholar in his study.” He adds, that “recompences are the food which nourishes military virtue.” Human nature must be altogether changed and perverted in the person of the military and naval surgeon, if, with his habits of life, training, and associations, and with his experience of what is fit, he should nevertheless consider himself sufficiently rewarded by “abstract principles.” Do our rulers suppose that men born and bred in the nineteenth century can rest satisfied with the Nirwana of the Hindus; with a state of Lethean and unconscious contentment—a state that has no wants, no regrets, and that has,

therefore, nothing to wish or to hope for on this side of the grave?

38. It ought to be observed, in reference to the subject of these notes, that whilst every other class of officers in the public services is daily acquiring facilities for obtaining honorary rewards and distinctions, the medical department stands unique in its exclusion. This is painfully felt. Exclusion, too, is a fact for ever present in the public eye; but not so the merits and deserts of the excluded. The superiority of prosperous recklessness also, claimed in consequence by the party exclusively possessed of honours and privileges, though in no way more deserving than those deprived of them, greatly aggravates the sense of injustice. There is no wrong so grievous as that which oppresses and humiliates the mind. The memorandum presented to the Duke of Wellington by Dr. Macleod, describe a career of forty years of danger and privation, without a single honour or privilege, and with nothing except the bare pay and professional promotion which, as it falls by death or rotation, without desert, brings but little consideration to the possessor, and no encouragement to others. If such a man had entered the army as an ensign, his position, after twenty years' service, would have been infinitely better than it was in the medical department after forty years. It is related of a young assistant-surgeon, that in one of the battles in Spain, while assisting his superior in an amputation, he received a gun-shot, which passed through both cheeks, injuring his tongue, and destroying several of his teeth. Dashing his knife into the ground, he stood up, and swore that no consideration should induce him to serve another day in a capacity in which he was liable "to be thus shot like a dog, without a hope of recompence or reward." On recovering from his wound he entered the ranks as an ensign, and his subsequent wounds brought him decorations. By the end of the war he had attained to the rank of major. This is but another example out of hundreds of the identity of the character of the surgeon and the soldier—of the perfect readiness with which the one is turned into the other.

39. There is another grievance of the most grave character,

affecting the surgeons of the army, and which is felt most deeply—the *illegal deprivation of substantive rank*.

On any deliberative commission—on a mere court of inquiry—on a committee relating to the medical profession, as an invaliding committee, for instance—the medical staff officer of highest rank in the army will find himself placed below a captain; and if he appeal to authority, an unexpected disclosure is made; he is informed that medical rank is but “purely official.” The formal commission, the relative and comparative rank assigned by regulation to the medical officer, are all set aside as a nullity. This took place twice within the last year, in the East Indies.

40. But the case is entirely changed whenever the medical officer, staff or regimental, is placed in arrest, and ordered for trial before a general court-martial. His rank, hitherto hidden and unavowed, is then made substantive as that of a field-marshal; and in the event of condemnation, the formalities and the deprivations are the same as in the case of any other military officer. We hear nothing, on such occasions, of a rank “purely official.” The surgeon may be suspended from his functions, deprived of rank and pay, cashiered or shot, just like the common soldier or the captain. He is now substantive in all his liabilities. This is another instance of false dealing with the medical officers of the army. Conduct like this detracts from the credit and consideration due to governments; for whenever persons in official authority would not be taken at their words, their words must have the effect of a snare and a delusion. The attributes of rank and station, as now held by medical officers, are conferred only to prove a mockery in duty and a reproach in punishment. It is presumed that these circumstances of foul dishonesty cannot be known to the civil government of the country. There can be no question that every medical grade in the army, staff and regimental, is, and ought, by right, to be as real and substantive a thing as that of colonel, major, or captain; otherwise, it is an empty cheat, a fraud. If the question were tried in a court of law, it is believed that army medical rank would be found substantive as any other. The reality and the truth are too clear

for sophistry, too transparent to be obscured; but the object of official persons is to envelop the question in "a fog of ambiguity"—argument, reason, and truth being wanting to them.

41. Another injustice put on the medical officers of the army is the absence of brevet rank. This keeps them behind all other officers in promotion, while it deprives them of the share in prize money to which they must otherwise be entitled. This is felt, like the last-mentioned treatment, to be cruel and unjust.

42. By the advocates of exclusion and privation it has been urged that the grievances of the medical department are purely sentimental, meaning thereby that they are unreal, or imaginary. They are admitted to be at once sentimental and substantial. Is it a sentimental grievance, in the proper acceptance of the word, to hold no substantive or co-ordinate rank,—to be deprived of brevet rank, and of the prize-money appertaining to it,—to be thereby also subjected to continual supercession and inequality in promotion,—to be deprived of military honours and rewards,—to be, through all these means, depressed in mind, and lowered in the estimation of the seaman and the soldier;—are all these, and the many other injuries inflicted on the surgeons of the army and navy, in reality but sentimental injuries? If so, all that man lives and strives for is sentimental.

43. But, for the sake of argument, let us admit that the reiterated complaints of the medical departments of the public services are founded on sentimental injuries. What, we would ask, are half the grievances in the world, but sentimental grievances? and those cut the deepest of which the external signs are least perceptible, and the victims of which are the least powerful. The ordinance which insults the feelings is more cruel, by far, than that which enslaves the body; it is that which rankles deepest, because of its abasing injustice. The contrast of sunshine, again, with the fortunate, only deepens the shade with the unfortunate. Were the services of Robert Jackson, during half a century of unwearied and honourable exertion, nothing? Is it a sentimental grievance, that such a man should die in poverty and ob-

scurity, with no other reward than a pension of £250, for an annual saving to the state of £80,000? Let us hear no more of sentimental grievances, in the wrong sense here referred to. The argument, as respects the just claims of the medical officers of the public services, is unfounded and disingenuous, as are all those so effectually disposed of in this summary. In truth, every argument urged against the fair pretensions of the surgeons of the army and navy only tends to establish and to enhance their merits, and their claims upon the state. The facts and circumstances stated in this summary are a reproach to the government of the country. The degraded condition of the medical departments of the army and navy is no longer dishonourable, only because it is universal. As respects the government, again, it is a fatuous policy.

44. In the *East India Register* for 1848, it will be seen that, besides innumerable brevets, two hundred and sixteen military officers, of various ranks, have received the honours of the Bath, of the Hanoverian Guelphic Order, and of the Durand Order. Out of an average list of medical officers of seven hundred and eighty, serving in the Indian army, it will be seen that three officers have received honorary distinctions—viz., Sir John McNeill, G.C.B., for political services rendered in Persia; Mr. Atkinson, third and lowest class, Durand Order, for services in Afghanistan; and Mr. Burns, a knight. Here the pendulum of error has stuck fast. There is no movement in fault even, to relieve the monotony of injustice. This is what Napoleon designated the injustice of feudalism.

45. Those who are familiar with the state of feeling amongst the medical officers of the British army speak of it emphatically as “brokenhearted.” The surgeons speak the language of earnest indignation, which nothing but the corrosion of intolerable wrong and a personal experience of extraordinary ill-usage could excite. With the uneducated common soldiers, partial and temporary discontent has never been known to exist without an efficient cause. “The British soldier,” says Napier, “will bear with a careless fortitude any privation but that of justice.” What, then, shall we say of the permanent discontent and feeling of depression that has so long existed

in the medical departments of the public services? Will any man believe that they are without a cause?

46. It is of vast importance to the public welfare that men engaged in any sort of public service should feel a pride in maintaining its reputation. Let any sense of injury, degradation, or invidious distinction, be associated with that service, and there will be a proportionate diminution of its efficiency. This truth is universally recognised and acted on in the army and navy, as regards the distribution of rewards to naval and military officers. Its practical recognition is indispensable to the efficiency of the medical departments. The reward of individual services is an important part of the debt due by the state to its officers; but its importance does not end here. For one individual marked out for reward and distinction, we make a hundred others emulous of similar rewards, and eager, through the exercise of their talents, and the amount of their services, to deserve similar recompences. What shall we say of a public service, composed of between two and three thousand officers, by sea and land, in which no such incentives have ever existed.

47. But, nevertheless, let the medical departments of the several services assume that concord which brings increase, and that union which brings strength, and there will be no fear for them. *Above all things, let them no longer accept words for realities; this has been the real cause of their long suffering.*

48. Referring to the noble exertions and patient endurance of the British soldier, and to the entire absence, in our army, of those mutinies which proved so formidable to the power of Alexander, Cæsar, and other commanders of antiquity, the military historian, Napier, does not hesitate to ascribe all these great qualities of the soldiers of his country, emphatically, to our just and considerate system of administration. He asks, "How have such results been obtained? Solely by the justice of the British military system." "Justice," he says, "is the characteristic of our military system." It will nowhere be contended that this justice, so powerful in its result, should be confined in its application. To be useful to its utmost extent it must apply itself to all the parts of the military establish-

ment of the country. When we look on the long-continued neglect and ill-usage of the medical departments of the army and navy, we shall be struck with astonishment at the energy and devotion to duty they have exhibited in every quarter of the globe—at the circumstance that the core of feelings should still remain sound with them. This energy, devotion to duty, and good feeling, can only have arisen from a high moral standard, a self-denial and self-respect, the result of the medical education and discipline. Had the officers of the navy and army been always treated thus, who shall say that their loyalty would not have been exchanged for indifference?—that they would not have undergone a moral decomposition? “The services of medical officers,” says Sir James M‘Grigor, “are of a less brilliant nature than those of the military, but in points of utility, talent, and zeal, I believe it was acknowledged that the medical was not inferior to any department in the army under the Duke of Wellington, contributing most largely to a successful issue of the contest in which we were engaged.”—(*Medical History of the British Army in Spain and Portugal.*) To exhibit the importance of the trust placed in medical officers, Sir De Lacy Evans shows, that at Waterloo 36,000 men passed through the hospitals; and that, in the six years’ contest in the Peninsula, “about 500,000 men were successively sent back, restored to efficiency.”—*Speech*, June 21, 1849.

49. The retribution which a long course of disguise and injustice is sure to bring about at last, is now to be visited on the government. In other words, the wrong is to be signally avenged on the country and on the country’s defenders. In the navy, injustice and exclusion have in some matters gone further than in the army, and the result is, that the youths from our schools of medicine are hesitating to enter the former service, while the College of Surgeons of London, Edinburgh, and Dublin, have petitioned the two houses of Parliament on the subject of the grievances of the medical officers of the navy. The government must now adopt one of two alternatives—it must be content to receive as medical officers for its fleets the refuse of the medical schools, or it must abolish injustice and exclusion.

50. This summary of painful facts and circumstances—this

summary account of the ungenerous and dishonest treatment of the naval and military surgeon—is now brought to its close. The writer has no personal objects to attain, but he feels keenly for his class. He entertains no envy or personal jealousy of any class of officers. He has, during a varied course of service, with troops of different nations, in peace and in war, had the good fortune to associate with many able and distinguished officers who were favourably disposed to the cause he has here attempted to advocate; and he reckons not a few of these as the best friends of his youth and manhood. But the course of his service, whilst it has brought him into intimate relations with excellent and friendly characters, has also placed him in close contact with many “gatherers of orders by profession”—with many a slavered and decorated booby. He has observed, that however insignificant the services by sea or land, however obscure their place in the hour of danger, these latter gentlemen are ever to be found in the foremost ranks of those who oppose the claims of, and who would ill-use, the sailor and the soldier surgeon. This is perhaps natural. Those who unworthily obtain rewards are the most familiar with injustice. He who obtains a reward without deserving it—he who possesses but the mere fiction of honour—must, by the evil constitution of our nature, be envious of those who deserve, but do not receive, their just recompence. The former is tenacious of his disgrace. This class, powerful in former times, is no longer influential. It must be borne in mind, again, that the mass of ordinary military and naval men are but imperfectly educated, and that they are but too often the slaves of habit and of routine; indeed, it is only now (1849) that any measure has been taken to ensure an education, even the most elementary, to the great body of the officers of the line. The best of the class are, beyond all other men, devoted to system, as witness their devotion to the foreign and unnatural Prussian system of discipline—to the horrible system of courts martial and floggings, more numerous than the days of the year, down to the tallowed and powdered heads and long queues, even unto the tropics. It is said that, in a high military quarter, the superiority of the percussion-cap over the flint is hardly yet admitted. This is the climax of devo-

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CHOLERA, &c.

ALTHOUGH the more severe cases of common English cholera cannot always be distinguished from the malady called Asiatic cholera, yet hardly any one doubts the distinct nature of these diseases, or that the latter was a stranger to Europe prior to the year 1830. A careful consideration of Asiatic cholera shows clearly enough that it is propagated by human intercourse. It has proceeded in various directions along the great channels of intercommunication, never progressing faster than people travel, and generally much more slowly. In extending to an island or a fresh continent, it always makes its first appearance at a seaport, and it never attacks the crew of a ship from a healthy port that is approaching an infected country, till their actual arrival. Many instances have occurred in which quarantine or *cordons sanitaires* have protected places from the cholera, either altogether, or for a time; and the most conclusive part of the evidence, is the number of instances in which the malady has been introduced into healthy localities by persons who have been taken ill after their arrival from places where cholera prevailed. Dr. Bryson related several instances of this kind in the paper that he read before this Society, and a number more might be now related did the time permit: indeed, the cases in which the progress of cholera can be traced in this manner are the rule rather than the exception, and are, at all events, far too numerous to be set down as mere coin-

cidences. It may be remarked, also, that coincidences of this sort are not found to obtain in rheumatism, ague, or indeed in any but epidemic diseases, the whole of which I look upon as communicable from one patient to another, this communication being probably the real feature of distinction between epidemic and other diseases.

Another circumstance strongly confirmatory of the communication of cholera, is the direct relation which exists between the number of the population and the duration of the disease in different towns and villages. The accompanying figures were compiled by me from Dr. W. Merriman's valuable table of cholera in England in 1832 :—(a)

Number of Places.		Duration in Days.		Average Population.
52	.....	0 to 50	.....	6,624
43	.....	50 to 100	.....	12,624
33 } or 34 }	.....	{ 100 and up- wards. }	.....	{ 38,123 or 78,823 }

It will be seen, that 52 places are enumerated in which the cholera continued less than 50 days, and that the average population of these places was 6,624; that there are 43 places specified in which the disease lasted 50 days, but less than 100, the average population of these places being nearly twice as great as that of the former; while in the remaining 34 towns, in which the cholera continued for 100 days and upwards, the average population was very much greater still, being 38,000 or 78,000, according as London is omitted from or included in the list. I believe that the same rule has obtained during the recent epidemic, but I have no precise information on the point. It is hardly necessary to remark, that if the cholera cases were not connected one with another, there would be no reason why the few cases which happen in a village should not be scattered over as long a period as the thousands which occur in a great metropolis.

I shall perhaps be thought singular in asserting, that there is no evidence opposed to the propagation of cholera by its communication from individual to individual, or in favour of any other origin of the disease. The chief facts which are believed to be opposed to the extension of cholera by communication are the following: That many persons are

(a) Transactions of Royal Medical and Chirurgical Society, 1844.

placed in close relation with the sick, nurse them, and wait upon them, and sometimes even sleep in the same bed, without becoming infected with the malady; that quarantine and *cordons sanitaires* often fail to arrest its progress; and that persons are often attacked with it who have had no intercourse with the sick or their friends.

These facts are thought to be opposed to the communication of cholera, because it is assumed, that this disease, to be communicated, must extend itself, as the eruptive fevers are believed to do, by means of some emanation given off from the patient into the air; or, if not in that way, then by contact with the patient, or articles of clothing, etc., which have been near him. But, without assuming such hypotheses, the circumstances above mentioned would not in any way oppose the evidence of the communication of cholera. Nearly every one of these facts is equally true of syphilis, as of cholera. Persons nurse and wait on syphilitic patients, and might even sleep in the same bed with them, without contracting the malady; and it is very doubtful, whether quarantine regulations, however strict, would prevent its communication, as they would be evaded. These circumstances are not considered to interfere with the proofs of the contagiousness of syphilis, only because we happen to know the way in which it is communicated; and when we shall know equally well the way in which cholera is communicated, I do not doubt that we shall find them equally inapplicable to that disease.

A consideration of the pathology of cholera is capable of indicating to us the manner in which the disease is communicated. If it were ushered in by fever, or any other general constitutional disorder, then we should be furnished with no clue to the way in which the morbid poison enters the system; but if it commences by a local affection of any particular part, and the system at large only suffers in consequence of the local affection, then it is pretty evident, that the material cause of the disease must have been applied to the part first affected. From all that I have been able to learn of cholera, either by my own observation or that of others, it has appeared, that the illness always commences with the affection of the alimentary canal; and in all the cases that I have seen, the loss of fluid from the stomach

and bowels has been sufficient to account for the collapse, when the previous condition of the patient was taken into account, together with the suddenness of the loss, and the circumstance that the process of absorption appears to be suspended. Certain fatal cases of cholera without evacuations have occurred; but, whenever there has been an examination of the body in such cases, the excretions peculiar to cholera have been found in the bowels. It appears, indeed, that the cholera poison never enters the circulation, and that the blood does not become contaminated in this disease, except when congestion of the kidneys follows as a secondary affection. The irritation of the bowels accounts for the cramps; and the loss of the water and saline constituents of the blood is the cause of the collapse and the symptoms of asphyxia. The careful analyses of the blood by Dr. Garrod have confirmed the fact, that its solid constituents are relatively much increased by the loss of water. On this account, it becomes so thick that it circulates with difficulty through the capillaries of the lungs, while the diminished quantity of salts renders it still further unfitted to undergo the usual changes in respiration. The injection of a weak saline solution into the veins of cholera patients in the state of collapse has often been attended with the most surprising effects of a temporary nature, at once restoring the patient, who the minute before was nearly dead, to a state of apparent health and strength. It was justly remarked by Dr. Budd, in a clinical lecture delivered at King's College Hospital, that, if the patient's symptoms depended on a poison circulating in the blood, they could not be removed by the injection of a simple saline solution. The saline solution merely restores the water which has become deficient, and supplies salts analogous to those which have been lost.

If the poison which communicates cholera from person to person does not enter the blood, it is evident that it must multiply itself on the surface of the alimentary canal, and must be contained in the evacuations from the stomach and bowels. The proofs that the cholera poison is contained in these discharges, and that the disease is communicated by their being accidentally swallowed, are of a general as well as a particular kind.

It has been constantly observed, that the want of personal

cleanliness aided very much the propagation of cholera, although no explanation could be given of the circumstance; it is very evident, however, that without habits of strict cleanliness persons waiting on the sick must get their hands soiled with the cholera discharges, and must unknowingly contaminate the provisions they handle, in eating their own food or preparing that of others. The sudden discharge of the evacuations, which often soil the clothing or bed linen, and the little colour or odour they possess, very much increase the liability to their being swallowed in this way, and under some circumstances render it almost certain. For instance, when a large family, or more than one family are crowded into a single room, and when the same persons have to attend to the patient, and also to prepare and serve the meals for the rest of the inmates, without the materials for washing the hands, even if the inclination should exist, it is next to impossible that the provisions should be eaten without being contaminated with the peculiar discharges of the patient; and these are the circumstances under which the disease is found most frequently to spread among the inmates of a room. Mr. Baker, of Staines, who attended 260 cases of cholera and diarrhœa in the late epidemic, chiefly among the poor, informed me in a letter, with which he favoured me in December, 1849, that "where the patients passed their stools involuntarily the disease evidently spread." Deficiency of light is a great obstacle to cleanliness, as it prevents dirt from being seen, and it must aid very much the contamination of the food with the cholera evacuations.

The assistance which crowding lends to the spread of cholera could be explained on the hypothesis of effluvia or miasmata given off from the patient into the surrounding air; but the extension of the disease from want of cleanliness, deficiency of water, and deficiency of light, cannot be explained on such a hypothesis. The non-communication of cholera in cleanly families, where the hand-basin and the towel are in constant use, and where the apartments for cooking and eating are distinct from the sick-room; and also its non-communication, as a general rule, to medical men and other visitors of the sick belonging to the educated classes of society, are fully explained on the doctrine here

laid down, although these circumstances are inexplicable on the supposition of its spread by means of effluvia. Its fearful extension in certain pauper asylums for children and lunatics is also clearly accounted for, together with its non-liability to spread in more commodious and better regulated establishments.

The great fatality of cholera among all the mining populations of this kingdom has been very remarkable in both the epidemics of that disease. The chief reasons of this are as follow :—The miners generally remain eight hours in the pits, and take food with them, which they eat whilst at work. There are neither privies, hand-basins, nor towels in the mines; and when a case of cholera occurs in a pit, the hands of the workmen, in the dark subterranean passages, can hardly fail to become soiled with the discharges. Should we have a return of the cholera, I believe that many thousands of lives might be saved by dividing the time of labour into two periods of four hours, dissuading the workmen from taking food into the mines, and enjoining them to wash their hands on going home before taking any food. There are other causes to be afterwards mentioned which contribute to the extension of cholera in several of the mining districts, viz., the contamination of the wells and brooks with the evacuations of the people.

It can hardly be anticipated, from the nature of the subject, that we should be able to obtain distinct evidence of the cholera evacuations having been taken with the food. The following cases, perhaps, afford as decisive proof of this variety of communication of cholera as can be expected. In the beginning of last year, a letter appeared in the *Provincial Medical and Surgical Journal*, from Mr. John C. Bloxam, in the Isle of Wight, being an answer to the inquiry on cholera by Mr. Hunt. Among other interesting information, Mr. Bloxam stated, that the only cases of cholera that occurred in the village of Carisbrook, happened in persons who ate of some stale cow-heels, which had been the property of a man who died in Newport, after a short and violent attack of cholera. Mr. Bloxam kindly made additional personal inquiries into the case, in consequence of questions I put to him, and the following is a summary of the information contained in his letter :—

The man from whose house the cow-heels were sent for sale died on Monday, the 20th of August. It was the custom in the house to boil these articles on Monday, Wednesday, and Friday; and the cow-heels under consideration were taken to Carisbrook, which is a mile from Newport, ready boiled, on Tuesday, the 21st. Eleven persons in all partook of this food, seven of whom ate it without any additional cooking. Six of these were taken ill within twenty-four hours after eating it, five of whom died, and one recovered. The seventh individual, a child, who ate but a small quantity of the cow-heels, was unaffected by it. Four persons partook of the food after-additional cooking. In one case the cow-heels were fried, and the person who ate them was taken ill of cholera within twenty-four hours afterwards, and died. Some of the food was made into broth, of which three persons partook while it was warm; two of them remained well, but the third person partook again of the broth next day, when cold, and, within twenty-four hours after this latter meal, she was taken ill with cholera, of which she died. It may be proper to mention, although it is no unusual circumstance for animal food to be eaten in hot weather when not quite fresh, that some of the persons perceived the cow-heels to be not so fresh as they ought to have been at the time they were eaten, and part of them had to be thrown away a day or two afterwards, in consequence of being quite putrid.

A man living in West-street, Soho, who kept a horse and cart, was employed, in the beginning of September, 1849, to remove some furniture from a house in Lambeth. The furniture had been the property of a woman who died of cholera, and had just been buried. The bedding and night-chair were left just as they were when the patient died. This man was taken with cholera during the night, within thirty-six hours after removing the furniture and other effects, and he died of the attack. I saw him with Mr. Marshall, of Greek-street, and we both remarked that his hands were very dirty, and had apparently not been washed for some days.

If the views here explained be correct, it is evident that the cholera poison may often be conveyed to a distance with provisions, as in the instance of the cow-heels above-men-

tioned, when there is no evidence of personal intercourse. There is also another very important medium for transmitting the cholera poison from the sick to the healthy, without immediate intercourse. It is the water which people drink; and in this case the proofs are often of a more direct and decisive nature.

The deficiency of water had often been spoken of, but the quality of the water had hardly ever been publicly mentioned as contributing to the increase of cholera till August, 1849, when Dr. Lloyd related to the South London Medical Society some occurrences that had taken place in Rotherhithe, and a pamphlet of mine, containing other instances, and some reasoning on the subject, appeared at the same time. Mr. John Grant, Surveyor to the Commissioners of Sewers for Surrey and Kent, also drew up a report in the same month, respecting the contamination of a well in a court in Thomas-street, Horsleydown; and attention having been strongly directed to the matter, several other instances of the connexion between violent outbreaks of cholera and the contamination of the drinking water were related.

One of the most fatal instances of communication of cholera by means of water, is that which occurred at Albion-terrace, Wandsworth-road—a row of seventeen houses, most of them detached a few feet from each other, and constituting the genteel suburban dwellings of a number of professional and tradespeople. All the houses were supplied with water on a uniform plan, from a spring in the neighbourhood, the water being conducted into a tank placed behind each house, from which it was pumped into the kitchen when required. The tanks were all connected together by pipes, and the surplus water flowed away into a drain, which received the contents of the house drains and cesspools. The various drains and pipes were so constructed that the water was liable to become tainted, and it had been occasionally complained of previously; but during a storm of rain on July 26th, the chief drain burst, and its contents became mixed with the water in the tanks. I had an opportunity of finding afterwards in the water, the stones and husks of currants and grapes, and various other substances which had gone through the alimentary canal. The more gross mate-

rials, however, settled to the bottom of the tanks, and the water pumped up was not so bad as to excite suspicion or attract much attention, except in two or three of the houses.

“ The first case of cholera occurred at No. 13, on July 28, (two days after the bursting of the drain,) in a lady who had had premonitory symptoms for three or four days. It was fatal in fourteen hours. There was an accumulation of rubbish in the cellar of this house, which was said to be offensive by the person who removed it; but the proprietor of the house denied this. A lady at No. 8 was attacked with choleraic diarrhœa on July 30; she recovered. On August 1, a lady, aged 81, at No. 6, who had had some diarrhœa eight or ten days before, which had yielded to her own treatment, was attacked with cholera; she died on the 4th, with congestion of the brain. Diarrhœa commenced on August 1, in a lady, aged 60, at No. 3; collapse took place on the 5th, and death on the 6th. On August 3 there were three or four cases in different parts of the row of houses, and two of them terminated fatally on the same day. The attacks were numerous during the following three or four days, and after that time they diminished in number. More than half the inhabitants of the part of the terrace in which the cholera prevailed were attacked with it, and upwards of half the cases were fatal. The deaths occurred as follow; but as some of the patients lingered a few days, and died in the consecutive fever, the deaths were less closely grouped than the seizures. There was 1 death on July 28, 2 on August 3, 4 on the 4th, 2 on the 6th, 2 on the 7th, 4 on the 8th, 3 on the 9th, 1 on the 11th, and 1 on the 13th. These make 20 fatal cases; and there were 4 or 5 deaths besides amongst those who were attacked after flying from the place.” The fatal cases were distributed over ten of the seventeen houses, and cases occurred also in the other seven houses, with the exception of one or two that were empty, or nearly so. In short, the cholera extended to all the houses supplied by the contaminated water, and to no others; for there were hardly any cases in the immediate neighbourhood at the time.

There are no data for showing how the disease was communicated to the first patient, at No. 13, on July 28; but it was two or three days afterwards, when the evacuations

from this patient must have entered the drains having a communication with the water supplied to all the houses, that other persons were attacked, and in two days more the disease prevailed to an alarming extent.

A similar instance of communication of cholera through the water occurred nearly at the same time "in Thomas-street, Horsleydown, where there are two courts close together, consisting of a number of small houses or cottages inhabited by poor people. The houses occupy one side of each court or alley, the south side of 'Trusscott's-court, and the north side of the other, which is called Surrey-buildings, being placed back to back, with an intervening space, divided into small back areas, in which are situated the privies of both the courts, communicating with the same drain; and there is an open sewer which passes the further end of both the courts. Now, in Surrey-buildings, the cholera committed fearful devastation, whilst in the adjoining court there was but one fatal case, and another that ended in recovery. In the former court the slops of dirty water, poured down by the inhabitants into a channel in front of the houses, got into the well from which they obtained their water, this being the only difference that Mr. Grant, the Assistant-Surveyor for the Commissioners of Sewers, could find between the circumstances of the two courts, as he stated in his report to the Commissioners. The well in question was supplied from the pipes of the South London Waterworks, and was covered in on a level with the adjoining ground; and the inhabitants obtained the water by a pump placed over the well. The channel mentioned above commenced close by the pump. Owing to something being out of order, the water for some time past occasionally burst out at the top of the well, and overflowed into the gutter or channel, afterwards flowing back again mixed with the impurities; and crevices were left in the ground or pavement, allowing part of the contents of the gutter to flow at all times into the well, and when it was afterwards emptied, a large quantity of black and highly offensive deposit was found in it.

"The first case of cholera in this court occurred on July 20th, in a little girl, who had been labouring under diarrhœa for four days. This case ended favourably. On

the 21st July, the next day, an elderly female was attacked with the disease, and was in a state of collapse at ten o'clock the same night. Mr. Vinen, of Tooley-street, who attended these cases, states that the evacuations were passed into the beds, and that the water in which the foul linen would be washed would inevitably be emptied into the channel mentioned above. Mr. Russell, of Thornton-street, Horsleydown, who attended many of the subsequent cases in the court, and who, along with another medical gentleman, was the first to call the attention of the authorities to the state of the well, says that such water was invariably emptied there, and the people admit the circumstance. About a week after the above two cases commenced, a number of patients were taken ill nearly together: four on Saturday, July 28th, seven or eight on the 29th, and several on the following day. Eleven of the cases were fatal. The deaths occurred in seven out of the fourteen small houses in the court.

"The two first cases on the 20th and 21st may be considered to represent about the average amount of cases for the neighbourhood, there having been just that number in the adjoining court about the same time. But, in a few days, when the dejections of these patients must have become mixed with the water the people drank, a number of additional cases commenced nearly together." (a)

The following instances were made known by Dr. Lloyd:—In Silver-street, Rotherhithe, there were 80 cases and 38 deaths in the course of a fortnight, early in July 1849, at a time when there was very little cholera in any other part of Rotherhithe. The contents of all the privies in this street ran into a drain which had once had a communication with the Thames; and the people got their supply of water from a well situated very near the end of the drain, with the contents of which the water got contaminated. Dr. Lloyd informed me, that the fetid water from the drain could be seen dribbling through the side of the well, above the surface of the water. Among other sanitary measures recommended by Dr. Lloyd, was the filling up of the well; and the cholera ceased in Silver-street as soon as the people gave over

(a) The passages in the above account, included within inverted commas, are quoted from a pamphlet, by the Author, "On the Communication of Cholera"

using the water. Another instance alluded to by Dr. Lloyd was Charlotte-place, in Rotherhithe, consisting of seven houses, the inhabitants of which, excepting those of one house, obtained their water from a ditch communicating with the Thames, and receiving the contents of the privies of all the seven houses. In these houses there were 25 cases of cholera, and 14 deaths; one of the houses had a pump railed off, to which the inhabitants of the other houses had no access, and there was but one case in that house. (a)

The following instance, as well as some others of a similar kind, is related in the Report on Cholera by the General Board of Health:—

“ In Manchester, a sudden and violent outbreak of cholera occurred in Hope-street, Salford. The inhabitants used water from a particular pump-well. This well had been repaired, and a sewer which passes within nine inches of the edge of it became accidentally stopped up, and leaked into the well. The inhabitants of 30 houses used the water from this well; among them there occurred 19 cases of diarrhœa, 26 cases of cholera, and 25 deaths. The inhabitants of 60 houses in the same immediate neighbourhood used other water; among these there occurred 11 cases of diarrhœa, but not a single case of cholera, nor one death. It is remarkable, that, in this instance, out of the 26 persons attacked with cholera, the whole perished except one.”—
P. 62.

Dr. Thomas King Chambers informed me, that at Ilford, in Essex, in the summer of 1849, the cholera prevailed very severely in a row of houses a little way from the main part of the town. It had visited every house in the row but one. The refuse which overflowed from the privies and a pigsty could be seen running into the well over the surface of the ground, and the water was very fetid; yet it was used by the people in all the houses except that which had escaped cholera. That house was inhabited by a woman who took linen to wash, and she, finding that the water gave the linen an offensive smell, paid a person to fetch water for her from the pump in the town, and this water she used for culinary purposes, as well as for washing.

The time does not permit of my relating any more of the

(a) See Med. Gaz., 1849, Vol. II., p. 429.

numerous instances in which severe outbreaks of cholera have been connected with adulteration of the water with the contents of drains and cesspools; and this is the less to be regretted, as the influence of this kind of water over the increase of cholera is now generally admitted.

In the seventh notification of the General Board of Health, on September 18, 1849, soon after attention had been first prominently drawn to this matter, the following passage occurs:—"The ascertained fact, that the use of vitiated water acts as a poison on the stomach and bowels, producing sickness, diarrhœa, and other symptoms resembling those of cholera, has recently received melancholy confirmation in numerous instances."

Now, in these instances, the disease induced is admitted to have been actual cholera in the same notification, and in the subsequent report of the Board, and there is no evidence to show that vitiated water generally acts as a poison; on the contrary, in many of the instances in which these outbreaks of cholera occurred, the people had been drinking the same vitiated water since the cholera of 1832. However repulsive to the feelings the swallowing of human excrement may be, it does not appear to be very injurious so long as it comes from healthy persons, but when it proceeds from cholera patients, and probably patients with some other maladies, it is a means of communicating disease.

Although, as I have observed, the influence of vitiated water in aiding the spread of cholera is now generally admitted, it must be stated that it is not usually understood to act in the way I have explained; but the contaminated water is thought by many to predispose persons, so that an unknown cause of cholera may act upon them in some inexplicable way. The manner in which these outbreaks occur, when caused by the contamination of a local supply of water, shows, however, that it does not act by merely inducing a predisposition. The water in many of the instances had been contaminated for months or even years, when a case or two of cholera occurring amongst the people on the spot, whose evacuations entered the water through the drains or otherwise, in a day or two afterwards there was a simultaneous outbreak of the malady amongst a number of the persons using the water; whereas, if the water had merely caused a predisposition, and was not acting as the exciting cause,

the cases of cholera, however numerous in the locality, might be expected to be distributed over the period that the disease prevailed in the town or district in which the locality was situated. In a review in the *Medical Gazette*, in 1849, the remark was made, that as the communication of cholera to the first case in Albion-terrace could not be traced, and was of course not attributable to the water, which did not yet contain the cholera evacuations, the same cause which would produce that case would produce others in the immediate vicinity. This must be admitted to be possible; and in the same way, if a fire had taken place from some unknown cause in No. 13, and the whole row had been burned down, it must also be admitted that a fire might possibly have originated from the same unknown cause in all the other houses about the same time, and that the burning of the one had no connexion with that of the others. No one, however, would believe this to have been the case.

Besides the local outbreaks already alluded to, it can be shown, that the cholera was often communicated through the water, on a more extensive scale, by means of the sewers which empty themselves into various rivers, from which the population of many towns derive their supply of water. In several towns of this country, among which are Birmingham, Leicester, Bath, and Cheltenham, there were only a few cases of cholera, either in 1832 or 1849, and those chiefly in persons who had arrived from other places in which the cholera was prevailing, or among the immediate attendants of these patients. Now, all these towns were supplied with water from sources quite uncontaminated with the contents of sewers. In some towns so circumstanced, there has been a good deal of cholera, but then it was confined to the poor, and to particular localities in the towns; but, on the other hand, in all those towns in which the malady extended generally, and was not confined to the poor and dirty, this connexion between the sewers and drinking-water existed. A great part of London was in this condition in both epidemics; Exeter was so in 1832, and Hull in 1849. The difference between the two epidemics in Exeter and Hull, in connexion with an altered supply of water, is very remarkable. In 1832, the people of Exeter were supplied with water by water-carriers, who obtained it from two mill-streams diverted from the river; and one of the chief sewers

of the town emptied into a branch of the river which divided into the two mill-streams. Cholera commenced with a woman and child who had just arrived from Plymouth, where the former had been nursing another child that had died of the same disease. It soon became very prevalent and severe for the size of the town. There were 1135 cases, and 345 deaths. (a) Subsequently to 1832, Exeter has been supplied by waterworks, with water derived from the river Exe, at a point two miles above the town, and more than that distance above the influence of the tide. In 1849, there were only about 20 cases of cholera in Exeter, nearly half of which occurred in strangers coming into the town, and dying within two or three days after their arrival.

In 1832, Hull was scantily supplied with water, conveyed in pipes from some springs situated three miles from the town; in the epidemic of that year the cholera was confined almost exclusively to the poor, and the deaths amounted to 300. Between that time and 1849, Hull, besides an improved system of drainage, obtained a more abundant supply of water. The waterworks, however, are situated on the river Hull, two miles and three quarters from its confluence with the Humber. About half the sewage of the town is delivered into the river Hull, and the tide flows up this river for many miles past the waterworks, carrying with it the filth from the sewers. In the late epidemic the deaths from cholera and diarrhœa in Hull amounted to nearly 3000, and occurred among all classes of the community.

In London the cholera was most prevalent during both epidemics in those districts supplied with water vitiated by the contents of sewers and cesspools, and indeed it generally bore an exact relation to the amount of vitiation. The map from the second Report on the Health of Towns, which is suspended in the room, shows the districts of the metropolis supplied by the different Water Companies; and the other map, from Mr. Grainger's Appendix to the Report of the Board of Health on Cholera, is coloured to show the relative prevalence of the late epidemic in different parts of London. A large district on the north of the Thames is supplied with

(a) See "History of the Cholera in Exeter in 1832" by Dr. Shapter, to whose kindness the writer is indebted for additional information.

the New River water, which is not contaminated by the sewers; another district on the same side of the river is supplied by the East London Waterworks Company, with water obtained from the Lea, above the influence of the tide, and nearly, if not altogether, free from contamination. These districts are not much tinged with the blue of cholera in Mr. Grainger's map, except in particular spots in which there was generally a local supply of contaminated water, as, for instance, in the neighbourhood of Bridge-street, Blackfriars, where many of the inhabitants obtained water for drinking from St. Bride's pump, which was afterwards closed in consequence of its being ascertained that the well had a communication with a sewer which emptied into the Fleet ditch; and in the vicinity of Shoreditch and at Hackney, where Dr. Gavin found the contents of the privies overflowing or percolating into the wells in certain courts and allies. The north-west districts of the metropolis are supplied with water by the West Middlesex and Grand Junction Water Companies, who obtain the water from the Thames, near Hammersmith and Brentford, where the river is in a great measure free from sewage at particular times of the tide, and the water is also purified by subsidence in large reservoirs. The districts so supplied were not severely visited by cholera.

The district supplied by the Chelsea Waterworks, was not severely visited by cholera during the late epidemic, as appears by the cholera map, except in particular spots where contaminated water was used, as in the neighbourhood of Duke-street, Chelsea, where many of the people obtained water by dipping a pail into the Thames. Now, the Chelsea Company derive their supply of water from the Thames at Chelsea, where it is very foul; but having till lately to supply the Court and a great part of the nobility, they have large and expensive filters, and also very capacious settling reservoirs, in which the water is kept for a considerable time before its distribution. Dr. Hassall found the Chelsea Company's water to contain much less organic matter than that of the Companies supplying the districts on the south of the Thames; and he found it to be free from the hairs of the down of wheat, yellow ochreous substance, (believed to be partially-digested muscular fibre,) and other substances

which had passed through the alimentary canal, and were found in the Vauxhall and Lambeth Companies' water.(a)

The districts of London, on the south side of the river, are supplied with water obtained from the 'Thames near the Hungerford Suspension Bridge, and at Vauxhall, by the Lambeth, the Vauxhall, and the South London Companies. The water is very imperfectly filtered through coarse gravel, and has little or no opportunity to subside; and according to the evidence of Dr. Hassall, mentioned above, it contains a great deal of excrementitious matter. The cholera was very much more severe on the south side of the Thames than on the north, as appears by the map. There were other causes for this besides the water supplied by the Companies. The wells in this part of the town are very shallow, and are often vitiated by the contents of the cesspools, which percolate through the ground; and a yet more important cause of the great prevalence and fatality of cholera was the existence of certain tidal ditches in Bermondsey and Rotherhithe, the places in which the mortality was greater than in any other part of the Metropolis in the late epidemic. These ditches were the direct receptacles of the excrementitious matters of a large population, and furnished at the same time the only supply of water that could be obtained by a great number of the inhabitants. I was furnished by Mr. Grant with the result of a house-to-house visitation in Jacob's Island, which is surrounded by one of these ditches, and it shows that the mortality from cholera was much higher among the people who had no supply of water except from the ditches, than among those who had access to the pipe-water of the Company.

In the epidemic of 1832, the part of this Metropolis most severely visited by cholera was the Borough of Southwark, in which ninety-seven persons in each 10,000 of the population were carried off, being nearly three times the proportion of those that died in the rest of London. Now, the Borough at that time was supplied by the Southwark Waterworks with Thames water obtained at London-bridge, and sent direct to the houses without the intervention of any reservoir.

The communication of cholera by means of the water is well illustrated by the instance of Moscow, which was

(a) A Microscopic Examination of the Water supplied to the Inhabitants of London.

severely visited by that disease in 1830, but much less severely in the second epidemic. Subsequently to 1830 the greater part of the town, which is situated to the north of the Moscow river, obtained a supply of excellent water conducted in pipes from springs at a distance; and the cholera in 1847 was chiefly confined to those parts of the town which lie to the south of the river, to which the new supply of water did not extend, and where the people had still only impure river water to drink. (a)

The Table [copied and suspended in the room] from the Weekly Report of the Registrar-General of January 12, 1850, shows the mortality from cholera in the different districts of London supplied by the various Water Companies; and if the purification of the Chelsea water, and certain local contaminations of the water before mentioned be taken into account, the mortality will be found to bear a very close relation to the absence or presence of connexion between the sewers and the water supplied. It also appears from the same table that the average mortality from all causes in a series of years bears a relation to the quality of the drinking water. There is great reason to believe that typhoid fever and some other epidemic diseases are communicated occasionally through the drinking water; and there are a great number of facts in the history of the Plague that have led me to believe that it is communicated in exactly the same way as cholera. There are also many circumstances which render it probable that the cause of one disease not epidemic and communicable from person to person, but endemic, viz., ague—often exists in the water of marshy districts, and is acquired by drinking the water; but there is not space to enter on these subjects at present. (b)

(a) Report of Swedish Commissioners, quoted in the Second Report of the Metropolitan Sanitary Commission. 1848

(b) Mr. Wm. Blower, surgeon of Bedford, speaking of Wooton, near Bedford, says, "A few wells have been dug lately, and good water has been obtained, and there is every probability, that if the water pits were filled up, and more wells dug, and the draining completed, that sporadic typhus and ague which have so long infested this village, and occasioned so much distress and expense, might be entirely eradicated. A respectable farmer informed me that, in the neighbourhood of Houghton, a few years ago, his was the only family that used well water, and almost the only one that escaped ague."—General Report of Poor-law Commissioners on the Sanitary Condition of Great Britain, 8vo. 1842. P. 66.

Mr. Grainger also quotes some instances, at page 94 of his recent Appendix to the Cholera Report, in which a number of persons contracted intermittent fever by drinking marsh water, while others, exposed to the same atmosphere who did not drink the water, altogether escaped.

The large public institutions of London, in which the inmates are shut up from the rest of the community, showed the influence of the water, or the absence of that influence, in a remarkable manner during the late epidemic of cholera. Bethlem Hospital and the Queen's Prison are both supplied with water from deep wells on the premises, and, although situated on the south of the Thames, in a district in which the cholera was very fatal, there was not a death from that disease in Bethlem Hospital, with a population of more than 400, and only one death in the Queen's Prison, with a population of 300 and upwards. In Milbank Prison, on the contrary, the cholera was very prevalent until the greater number of the prisoners were sent away. It was considerably worse, in fact, than among the population outside in the same neighbourhood. There were 113 cases and 48 deaths; the deaths amounting to 4·3 per cent. of the average number of prisoners. The water used in the Milbank Prison was obtained from the Thames at the spot: it was filtered, indeed, through sand and charcoal, but not kept for a while in large reservoirs like that sent from the Chelsea Waterworks to the rest of Pimlico and Westminster. In Tothillfields Prison, supplied by the waterworks just mentioned, there were 13 deaths from cholera among 800 prisoners, but in all the other prisons on the north of the Thames which are supplied with water into which the sewage cannot enter, there was but one death from cholera; that death took place in Newgate.

The first cases of cholera which occurred in London in the autumn of 1848 are particularly interesting with reference to the influence of the water of the Thames. According to the valuable Report of Dr. Parkes on the subject, subsequently corrected by him in one or two particulars, in consequence of some information which I received from Mr. Russell, surgeon, of Horsleydown, the first case of cholera in London (when the disease was introduced into this country from Hamburg, the greatest commercial town on the continent of Europe, as it had been just seventeen years before) occurred on September 22nd, in a seaman named John Harnold, newly arrived by the Elbe steamer. It is, indeed, said that cases of cholera occurred in London prior to this; and Dr. Copland mentioned one in the *Medical Gazette* as having happened on July 11th, in a man who

had been employed on board of a steam-vessel from St. Petersburg, where the pestilence was then prevailing. But, looking on the case of John Harnold as the first, then the next case occurred in the same room, on September 30th—eight days afterwards—in the person of a workman, named Blenkinsopp. These cases occurred in New-lane, Gainsford-street, Horsleydown, close to the Thames. In the evening of the day on which the second case occurred in Horsleydown, a man was taken ill in Lower Fore-street, Lambeth, and died on the following morning. At the same time that this case occurred in Lambeth, the first of a series of cases occurred in White Hart-court, Duke-street, Chelsea, near the river. A day or two afterwards, there was a case at 3, Harp-court, Fleet-street. The next case occurred on October 2nd, on board the hulk *Justitia*, lying off Woolwich; and the next to this in Lower Fore-street, Lambeth, three doors from where a previous case had occurred. The first thirteen cases were all situated in the localities just mentioned; and on October 5th there were two cases in Spitalfields.

Now, the people in Lower Fore-street, Lambeth, obtained their water by dipping a pail into the Thames, there being no other supply in the street. In White Hart-court, Chelsea, the inhabitants obtained water for all purposes in a similar way. A well was afterwards sunk in the court; but at the time these cases occurred the people had no other means of obtaining water, as I ascertained by inquiry on the spot. The inhabitants of Harp-court, Fleet-street, were in the habit, at that time of procuring water from St. Bride's pump, which was afterwards closed on the representation of Mr. Hutchinson, surgeon, of Farringdon-street, in consequence of its having been found that the well had a communication with the Fleet-ditch sewer, up which the tide flows from the Thames. I was informed by Dr. Dabbs, that the hulk *Justitia* was supplied with spring-water from the Woolwich Arsenal; but it is not improbable that water was occasionally taken from the Thames alongside, as was constantly the practice in some of the other hulks, and amongst the shipping generally.

It must no doubt seem very unlikely to many that the materies morbi of a disease should pass for a distance of two or three miles through the water; but the propagation of

plants and the lower forms of animals by seeds and ova, which can be transported to a distance, would appear equally improbable, were it propounded for the first time. Analogy leads to the belief that, however minute the particles which propagate cholera, they must yet have a definite structure, (probably that of a microscopic cell), and must therefore not be capable of dilution, so as to be rendered inert.

In the autumn of 1849, Drs. Brittan and Swayne, of Bristol, considered that they had discovered the cause of cholera in a minute fungus; and Dr. Wm. Budd, of the same city, met with the supposed fungus in various specimens of water used as drink, in places where the cholera was very prevalent. It was, perhaps, too much to expect, that we should obtain a knowledge of cholera more exact than that which we possess of syphilis, small-pox, and other better known diseases; and the supposed fungi were resolved into other things. As many of these, however, were particles of bran and other matters which had passed through human intestines, the labours of these gentlemen confirm the fact of the water in various places being a medium of communication between the alimentary canals of cholera patients and those of other people.

In one of the Registration Reports, in the beginning of last year, Mr. Farr pointed out a remarkable connexion between the prevalence of the cholera of 1849 and the temperature of the Thames. The probable reason of this connexion is, that the cholera poison does not so well retain its properties unimpaired in water below 60° Fahr. as at warmer temperatures. Mr. Farr appeared to attribute the influence of temperature to the increased amount of vapour and effluvia given off from the surface of the river; but this would not explain the influence of the water on those who drink it.

It may be here remarked, that it would be unreasonable to expect to trace every case of cholera, either through the water, or by contamination of the food; more especially as it is sufficiently probable that the disease may be communicated by cases which proceed no further than preliminary diarrhœa. If the view here given be found to explain more of the progress of cholera the more it is inquired into, it must be held to account for the cases which cannot be traced, in the same way that generation accounts for the

existence of plants and animals under circumstances in which we cannot always trace their parentage.

With regard to preventive measures, I entirely agree with the Registrar-General, that "internal sanitary arrangements, and not quarantine or sanitary lines, are the safeguards of nations." For I believe that quarantine would often be evaded, and is altogether unnecessary. The presumed sanitary measures, however, should have a particular reference to the mode of communication of cholera, otherwise they may sometimes be prejudicial instead of advantageous. I have given one instance in the case of Hull, where the malady was nearly ten times as fatal in the late as in the former epidemic, on account of a more plentiful supply of water having been obtained without reference to its quality. In London, the late epidemic was three times as fatal as that of 1832. This was, in my opinion, partly owing to the manifestoes of the General Board of Health, which were understood to imply that the cholera was not communicable or catching in any way; and these documents had an immense circulation, by being copied into the newspapers. The effect was also due to presumed sanitary measures employed both in the interval of the two epidemics and during the late one. In the interval a great number of cesspools had been abolished, and a much larger amount of fæces became daily sent into the Thames, whilst a great portion of the people had still to drink the water; and during the epidemic itself, the flushing of the sewers increased the mischief in two ways: first, by driving the cholera evacuations into the river before there was time for the poison to be rendered inert by decomposition; and second, by making increased calls on the various Companies for water to flush the sewers with, so that the water which they sent to their customers remained for a shorter time in the reservoirs before being distributed. It should be remarked, also, that the contents of the sewers were driven into the Thames by the flushing, at low water, and remained flowing up the stream for four or five hours afterwards.

The sanitary measures required for the prevention of cholera, according to the views here explained, suggest themselves at once. They are as follow:—

1. The entire disuse of water into which sewers flow, or which is navigated by persons living in boats, or which is in any other way contaminated by the contents of drains or cesspools.

2. An extended use of hand-basins and towels among the poor, together with sufficient water always in readiness.

3. Strict cleanliness in every one about the patient, or the dead body; and especial care in all such persons to wash their hands before touching food.

4. The separation of the healthy from the sick, and their removal to another abode, when they have no place but the sick room in which to prepare and take their meals.

5. The immersion of all soiled linen in water, until it can be scalded and washed; for if it should become dry, the fæces might be wafted about in the form of dust, and so be swallowed by any one who should come near the linen.

In the way just indicated, it is probable that cholera may be occasionally communicated for a short distance through the air; and when small-pox and other diseases are communicated through the air, it is most likely by organised particles, which are wafted like the seeds of plants and the ova of some animals, and not by anything in the form of gas or vapour. Indeed, there are neither facts nor analogy to show that any kind of epidemic disease whatever can be caused by the air, or even influenced by it, otherwise than indirectly. Epidemics have been attributed to the state of the atmosphere since the time of Hippocrates, and the antiquity of the belief causes it to be received as an indisputable axiom, although our better knowledge of the nature of the air, and of gaseous bodies in general, is capable of entirely disproving it. But the facts which disprove the atmospheric theory of diseases are often pressed into its service, and so handled as to lend it apparent support.

It is a curious circumstance, that the medical men who are most active in advocating the sanitary measures which, as a general rule, would prevent the communication of cholera, for the most part disbelieve in its communicability, probably because the question had never suggested itself to them, except in the form of infection by means of effluvia, or of contagion by contact. What is still more remarkable is, that these gentlemen generally look on the presence of all those circumstances which aid in the communication of

cholera, when found in situations where the pestilence prevails, as proofs that it is not communicable. They speak of these circumstances as something which can explain the increased prevalence of the disease without its being communicable, although it has never been explained in this way, even by a hypothesis. One or two hypotheses have indeed been attempted, but have signally failed. One of the most able and experienced authors on cholera writes, for instance, as follows :—" If we could suppose that certain organic impurities existing in the atmosphere of unhealthy neighbourhoods, passed into the blood through the lungs, so as to follow the circulation, and that similar impurities taken into the stomach with articles of food or drink, were likewise absorbed into the blood ; if we could, moreover, suppose that the epidemic influence possessed the power of assimilating such organic matter to its own poisonous nature, we should be enabled to include a number of complex phenomena under a hypothesis which would indicate the requisite measures of prevention." The above quotation is from Dr. Sutherland's Appendix to the Report on Cholera : but the latter part of the supposition is quite incapable of being entertained for various reasons ; one of which is, that the assumed epidemic influence, in order to be capable of acting in this way, must consist of some material mixed with the atmosphere, and if so, it would diffuse itself through the air, and would also pass along with the air. It could not travel against the wind, or remain in a spot for weeks, without extending to the next parish, when the air is moving at the rate of one or two hundred miles a day.

There is much evidence on the subject of this paper which I had not room to bring forward, and many important points connected with it that I have not been able even to allude to ; but I trust that I have succeeded in drawing the attention of the Society to the views I have endeavoured to explain, in such a way that they will be induced to consider the question carefully for themselves.

54, *Frith-street, Soho-square.*

